A RECLASSIFICATION OF AUSTRALIAN ROBBERFLIES OF THE *CERDISTUS-NEOITAMUS* COMPLEX (DIPTERA—ASILIDAE).

By G. H. Hardy, Walter and Eliza Hall Fellow in Economic Biology, Queensland University, Brisbane.

(Seven Text-figures.)

[Read 24th November, 1926.]

For Australian Asilids, as also those of elsewhere, generic names are being used that were founded upon European species and without true regard to relationships. White pointed out these shortcomings very effectively when he made the first effort to put the more obscure Asilinae on a better basis. I am indebted to Professor M. Bezzi who has kindly supplied me with a number of Asilids representing the typical forms of their genera, thus enabling me to develop White's suggestions for improvement. White did not examine all the genera allied to those he dealt with and that may be related to Australian material; one of these, *Paritamus*, he evidently overlooked, this being even more typically Australian in appearance, if not in relationship, than either *Neoitamus* or *Cerdistus*. I have not seen *Glaphyropyga* under which Schiner described a species, the typical form being from Brazil.

Many authors regard *Asilus* as being a genus that should incorporate others hitherto not very well defined and, therefore, would relegate such to a position of subgeneric value. There seems to be no difficulty, however, in dividing *Asilus*, used in that wide sense, into two very clearly defined groups. The scheme here proposed certainly holds well for all the Australian material yet known and, as far as I can gather, the same seems true, if suitable modifications are incorporated, for European and North American species.

In *Asilus* and its allies the dorsal surface of the eighth abdominal segment is subequal to the seventh, convex above and flat below, and its appearance is that of a normal segment even when it is bare, black and shining. In *Cerdistus* and its allies, with which the present paper deals, the eighth abdominal segment of the female has an appearance quite distinct from that of *Asilus*. Typically it is compressed, the ventral half invariably being so. On those two Australian genera, *Pararatus* and *Blepharotes*, which strictly do not belong to either of these groups, it approaches the same form, but the ventral half of the eighth abdominal segment is not so closely amalgamated with the upper half. The upper half is but slightly compressed, showing a convex dorsal surface, and the ventral half is not quite so compressed as in *Cerdistus*, but the best distinguishing feature is to be found in the structure of the lamella. In *Cerdistus*, as also in *Asilus*, this appendage is cylindrical, but in *Pararatus* and *Blepharotes* it is quite differently constructed, being broad, flat, and somewhat arched. I have seen the organ in use on a species of *Asilus* that was ovipositing on a leaf, and it acted as a sensory organ, feeling for a vacant spot amongst a mass of eggs already deposited. The final cluster of eggs represented a mass of orderly rows, although they were not necessarily deposited in sequence along these rows, gaps being left and filled later.

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The lamella on *Pararatus* and *Blepharotes* could scarcely be used in this manner, but appears to form a guide by means of which the issuing eggs are kept in a straight course.

In *Cerdistus* and allies, the eighth abdominal segment, the so-called ovipositor, is much longer than the seventh, or, if but barely so, it is entirely compressed. This ovipositor is evidently a highly organized modification arising from the more primitive type, as represented by the eighth segment on *Asilus*, and is due to a need for an extension of the apex of the abdomen. This reaches a maximum, perhaps, in *C. constrictus*, n. sp., where it is almost as long as the rest of the abdomen. Another form of extreme adaptation is taken by the species grouped under *Neoitamus*, on which there is a more or less marked tendency for the ovipositor to incorporate the sixth and seventh segments as well as the eighth. In this latter case the sixth and seventh segments are never compressed ventrally, the ventral surface may be small and elongate, but never linear. Genera such as *Antipalus*, which have distinctive forms of ovipositor, do not come within the present scope of study. *Philonicus*, with spines on the ovipositor, is included in the key as it is somewhat analogous to the new genus *Neocerdistus* but, however, in no way related to it.

White considered that the robberflies here dealt with are in some cases fairly typical of *Neoitamus*, but show every gradation between it and *Cerdistus*, *Machimus*, *Epitriptus* and *Stilpnogaster*, at the same time not agreeing with any of them. In consequence he used *Neoitamus* and suggested names for two other divisions, but in the present study it has been found possible to eliminate two of the five older genera mentioned by White, leaving a total number of six names in the *Cerdistus-Neoitamus* complex and the manner of doing this is indicated in the following key:

Key to the genera allied to the Cerdistus-Neoitamus *complex.*

1. Ovipositor without a lamella 2
   Ovipositor with a lamella 3
2. Ovipositor with subapical spines placed dorsally ..... *Philonicus*
   Ovipositor without such spines, but with a pair of small processes placed apically ..... *Neocerdistus*, n. gen.
3. Lamella wedged in; that is, the ovipositor extends some distance above, below, or both above and below the lamella, thus limiting the range of its movements ..... *Dysmachus, Machimus, Eutolmus*
   Lamella free 4
4. Anterior femora with well developed bristles on the anterior dorsal or posterior surfaces ..... *Heligmoneura, Tolmerus, Epitriptus*
   Anterior femora without bristles on these surfaces and rarely so on the ventral surface ..... *Cerdistus, Stilpnogaster, Neoitamus, Paritamus, Trichoitamus* and *Rhabdotoitamus.*

Note.—Exception may be made to the grouping of *Eutolmus* with *Machimus* and *Dysmachus*, but if this is not acceptable, owing to the movements of the lamella being less limited than I suspect it to be (admittedly a contentious point), then the genus would fall to the first half of the third couplet, joining *Tolmerus* and *Epitriptus*. My only female specimen of *Heligmoneura* is without a lamella, but this appears to have been broken off and in any case the genus is not of the *Cerdistus-Neoitamus* complex.

The Australian material falls into two of these groups, *Neocerdistus* and the last, in which six names are given. It seems advisable to collocate *Cerdistus*, *Stilpnogaster*, *Neoitamus*, *Paritamus*, *Trichoitamus* and *Rhabdotoitamus* as representing one genus, seeking characters that will arrange these anew into groups

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of subgeneric value. Obviously this cannot be accomplished on the study of Australian material alone, but it becomes necessary to substitute *Cerdistus* for *Neoitamus* owing to its earlier publication and in accordance with the scheme of classification here proposed. The generic name *Cerdistus* thus becomes a basis whereon further developments may be made, and this group divides into four subgenera in accordance with the following key.

Provisional key to the subgenera of Cerdistus.

1. Sixth and seventh abdominal segments bare, shining and more or less compressed ..... *Neoitamus*
   Seventh abdominal segment bare, shining and more or less compressed .. *Subgen.* (?)
   Sixth and seventh abdominal segments normal, covered with tomentum similar to that on the anterior ones 2
2. Male genitalia with an apical projection on the upper forceps .... *Cerdistus* (including *Paritamus, Trichoitamus, Rhabdotoitamus*)
   Male genitalia simple, at most with a subapical constriction of the upper forceps ..... *Stilpnogaster*

The recognizable described Australian species fall naturally into these subgenera, as is shown in the following list. Although the divisions here proposed may be considered artificial, they have the great advantage of keeping together those forms that are obviously closely allied, whilst any division based upon colour, as proposed by White, would separate some of them.

Neoitamus
- *setosus* Hardy.
- *rusticanoides,* n. sp.
- *fulvipubescens* Macquart.

Subgen. ?
- *flavicinctus* White.

Cerdistus.
- *maricus* Walker.
- *vittipes* Macquart.
- *fraternus* Macquart.
- *lautus* White.
- *gibbonsi* Ricardo.
- *rudis* Walker.

Stilpnogaster
- *armatus* Macquart.
- *claripes* White.
- *neoclaripes* Hardy.
- *constrictus,* n. sp.
- *conformis,* n. sp.
- *margitis* Walker.
- *laticornis* Macquart.
- *maculatoides* Hardy.

For the time being it seems advisable to retain *flavicinctus*, for which there appears to be no subgeneric name available, in *Neoitamus*, especially as this is the only species definitely known to me with its type of ovipositor; presumably, however, *N. hyalinipennis* Ricardo (*nec* White) conforms to the same. All the unnamed Australian species known to me also fall into these groups. *N. maculatus* White is only known from one sex and therefore cannot be included in the above list.

Distribution of Tasmanian species of Neocerdistus and Cerdistus. There are ten species of these flies recorded from Tasmania, and White described most of them. A complete list is given below with synonymy. Four species, *flavicinctus, fraternus, mistipes* and *laticornis*, have not been found on the mainland; the others occur as far as half way up the eastern coast of Australia, many reaching Brisbane which seems to mark the northern limit. As far as yet known none of them reach South Australia, the dipterous fauna of which State seems allied to that of Perth, Western Australia.

Neocerdistus, n. gen.
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Cerdistus Loew.
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fraternus Macquart, Hardy (*luctificus* Walker, *vulgatus* White).
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(*Stilpnogaster*) *armatus* Macquart, Hardy.
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laticornis Macquart.
(——) *mistipes* Macquart (*graminis* White), not seen by me.

Notes on some types in the British Museum.

I am greatly indebted to Mr. E. Brunetti who has compared some twelve or more sketches of male genitalia with the types in the British Museum and of these the following species have been commented upon.

R. rusticanus White. Mr. Brunetti remarks that my "figure does not agree well". He states that the forceps are shorter and the end is obtuse, the lamella prominent, the lower forceps much less curved. The depression that gives a bulge at the base of the upper forceps in my drawing is absent. The phrase "does not agree well" suggests that there was a resemblance and so it becomes possible to suppose that the apex of the upper forceps was turned inwards on the type and the depression on the upper forceps near the base may be a variable character, for it seems to serve no purpose. On the specimen I have drawn, the lower forceps are certainly distorted, for they expose a portion of the inner claspers that would normally be hidden. Unfortunately Mr. Brunetti did not make a sketch of the genitalia of the type, but, in view of his remarks, I am giving a new name to the form previously identified by me in collections as White's species and is described below as "*rusticanoides*".

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N. rudis Ricardo from Sydney, is sketched by Mr. Brunetti with a very long lamella, but without the apical process which exists on all the specimens under the name in Australia. Perhaps the processes are curved inwards, a not very uncommon occurrence on specimens which have beeen killed before the chitin hardens.

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NEOCERDISTUS, n. gen.

The species described by White as *Neoitamus abditus* from Tasmania differs from species of *Cerdistus* as here understood, by not possessing a lamella at the apex of the ovipositor; it has instead a pair of conical processes. White drew attention to the unique character in the wing venation, the second posterior cell

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When illustrating the ovipositor of the typical form, an error was made in the proportion of the minute apical processes, these being represented in the drawing as twice as long as they are on the type, whilst other specimens have them still shorter. A Queensland species has them more in accordance with the drawing, giving that apparent bifurcate appearance that may have been the kind referred to by Miss Ricardo when she alluded to the type of *A. obumbratus* Walker as "seems allied to *Cerdistus* but the ovipositor ends in a fork".

As far as yet known the species of this genus occur only during the late summer and autumn, whilst the lack of the style suggests that a habit or manner of oviposition differs from that of *Cerdistus*.

Type, *Neoitamus abditus* White (*acutangularis* Macquart). Tasmania.

Neocerdistus acutangularis Macquart.

Asilus acutangularis Macquart, *Dipt. Exot.* suppl. 2, 1847, 44.—*Neoitamus abditus* White, *Proc. Roy. Soc. Tasmania*, 1916, 178, fig. 29, and 1917, 93; Hardy, Proc. Linn. Soc. N.S.W., xlv, 1920, 190, figs. 1-3, and xlvi, 1921, 295.

Synonymy.—There is no species from Tasmania that fits Macquart's description so well as White's *N. abditus*, so there can be little doubt concerning the correctness of this synonymy.

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Genus Cerdistus Loew.

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It has already been pointed out that the generic name *Cerdistus* must be substituted for *Neoitamus*. Many of the species placed here have their nearest ally in *Paritamus* Verrall, a European genus that has not yet been defined. The priority of Verrall's name over the two proposed by White would be enough to commend itself as a substitute for at least one of them, but the Australian forms are regarded as constituting a complex in themselves and probably will ultimately prove divisible into several well defined groups to which two or more of the names already discussed will be applicable.

In a previous paper a key was given to the species then revised and it was based upon characters of both sexes. That key is extended and slightly amended so as to include the species revised below. The male may always be identified by referring to the drawings of the genitalia, but some difficulty will be experienced in identifying females, or in allying them with the males, so a second key is given, based upon the characters of the female only.

There are 57 specific names included under this genus and *Neocerdistus*; of these 21 are recognized as valid, most being applied to specimens in Australian collections. There are 16 names relegated to synonymy and 20 names are still outstanding. Probably about 6 will ultimately be found impossible to identify without their types becoming available for study, the remainder being diagnosed sufficiently, though often barely enough, for recognition when, as is the case with the Tasmanian forms, the fauna from their respective type localities becomes better known. There are now no outstanding species from Tasmania, and only a single specimen, a female, taken by Dr. A. Jefferis Turner at Cradle Mt., represents a new form in that State. The following is a full list of the outstanding names:

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Macquart: *Asilus australis, exilis, filiferus, longiventris, nigrinus, rufocoxatus, rufometatarsus.*

Walker: *Asilus coedicus, mutilatus, obumbratus* (undoubtedly a *Neocerdistus*) and *villicatus.*

Schiner: *Glaphyropyga australasiae.*

Ricardo: *Cerdistus australis, Neoitamus hyalipennis.*

White: *Neoitamus divaricatus, Rhabdotoitamus lividus, volaticus, rusticanus.*

Dakin and Fordham: *Machimus forresti, Neoitamus cygnus.*

Key to the species of Cerdistus *based on both sexes.*

1. Upper forceps of the male genitalia with a terminal process 2
   Upper forceps without a terminal process 9
2. Male genitalia short and globular, the apical process rising above the centre of the posterior margin and more or less at right angles to it. Ovipositor short. Two supra- and three post-alar bristles ..... *maricus* Walker
   Male genitalia elongate; if the apical process projects more or less at right angles to the posterior margin it rises below the centre of the upper forceps 3
3. The sixth and seventh segments of the female abdomen bare, shining and subcompressed 4
   Only the seventh segment of the female abdomen bare, shining and subcompressed ..... *flavicinctus* White
   The sixth and seventh segments of the female abdomen normal 5
4. Male genitalia with a conspicuous swelling at the base of the upper forceps; supra- and post-alar bristles two each ..... *rusticanoides*, n. sp.
   Without the swelling at the base of the upper forceps; one or two supra- and two post-alar bristles ..... *fulvipubescens* Macquart
5. Dorsal and ventral surfaces of the upper forceps tapering sharply to the apex which is truncate; two supra- and one, rarely two, post-alar bristles ..... *vittipes* Macquart
   Dorsal and ventral surfaces of the upper forceps more or less parallel; supra- and post-alar bristles two each 6
6. Apical process small, directed upwards and issuing from about the centre of the posterior border of the upper forceps 7
   Apical process issuing from the lower half of the upper forceps 8
7. Black species from Tasmania ..... *fraternus* Macquart
   Brownish species from Victoria ..... *lautus* White
8. Upper forceps appear to be deeply emarginate at the apical border so as to form two apparent processes. Ovipositor long ..... *gibbonsi* Ricardo
   Apical process strongly developed, forming a continuation of the upper forceps, but a small dorsal hump marks the division between the two. Ovipositor short ..... *rudis* Walker
9. Male genitalia with bristles 15
   Male genitalia without bristles 10
10. Anterior femora with a conspicuous row of ventral bristles. Ovipositor long. Two supra- and one, rarely two, post-alar bristles ..... *armatus* Macquart
    Anterior femora without ventral bristles 11
11. Ovipositor compressed ventrally, but has a dorsal surface. Two supra-, one or two post-alar bristles ..... *maculatoides* Hardy
    Ovipositor entirely compressed 12
12. Ovipositor short 13
    Ovipositor very long 14
13. Supra- and post-alar bristles one each; brown species ..... *claripes* White; *neoclaripes* Hardy
    Two supra- and one post-alar bristles; a small black species from Tasmania ..... *laticornis* Macquart
14. Ovipositor about the length of the third to seventh abdominal segments inclusive. Supra- and post-alar bristles two each ..... *constrictus*, n. sp.
    Ovipositor a little less than the length of the fourth to seventh abdominal segments inclusive. Two supra-, one or two post-alar bristles ..... *conformis*, n. sp.
15. Upper forceps of the male genitalia with a row of about ten slender dorsal bristles. Two supra-, one or two post-alar and two scutellar bristles. Sixth and seventh abdominal segments of female normal ..... *margitis* Walker

Macquart: *Asilus australis, exilis, filiferus, longiventris, nigrinus, rufocoxatus, rufometatarsus.*

Walker: *Asilus coedicus, mutilatus, obumbratus* (undoubtedly a *Neocerdistus*) and *villicatus.*

Schiner: *Glaphyropyga australasiae.*

Ricardo: *Cerdistus australis, Neoitamus hyalipennis.*

White: *Neoitamus divaricatus, Rhabdotoitamus lividus, volaticus, rusticanus.*

Dakin and Fordham: *Machimus forresti, Neoitamus cygnus.*

Key to the species of Cerdistus *based on both sexes.*

1. Upper forceps of the male genitalia with a terminal process 2
   Upper forceps without a terminal process 9
2. Male genitalia short and globular, the apical process rising above the centre of the posterior margin and more or less at right angles to it. Ovipositor short. Two supra- and three post-alar bristles ..... *maricus* Walker
   Male genitalia elongate; if the apical process projects more or less at right angles to the posterior margin it rises below the centre of the upper forceps 3
3. The sixth and seventh segments of the female abdomen bare, shining and subcompressed 4
   Only the seventh segment of the female abdomen bare, shining and subcompressed ..... *flavicinctus* White
   The sixth and seventh segments of the female abdomen normal 5
4. Male genitalia with a conspicuous swelling at the base of the upper forceps; supra- and post-alar bristles two each ..... *rusticanoides*, n. sp.
   Without the swelling at the base of the upper forceps; one or two supra- and two post-alar bristles ..... *fulvipubescens* Macquart
5. Dorsal and ventral surfaces of the upper forceps tapering sharply to the apex which is truncate; two supra- and one, rarely two, post-alar bristles ..... *vittipes* Macquart
   Dorsal and ventral surfaces of the upper forceps more or less parallel; supra- and post-alar bristles two each 6
6. Apical process small, directed upwards and issuing from about the centre of the posterior border of the upper forceps 7
   Apical process issuing from the lower half of the upper forceps 8
7. Black species from Tasmania ..... *fraternus* Macquart
   Brownish species from Victoria ..... *lautus* White
8. Upper forceps appear to be deeply emarginate at the apical border so as to form two apparent processes. Ovipositor long ..... *gibbonsi* Ricardo
   Apical process strongly developed, forming a continuation of the upper forceps, but a small dorsal hump marks the division between the two. Ovipositor short ..... *rudis* Walker
9. Male genitalia with bristles 15
   Male genitalia without bristles 10
10. Anterior femora with a conspicuous row of ventral bristles. Ovipositor long. Two supra- and one, rarely two, post-alar bristles ..... *armatus* Macquart
    Anterior femora without ventral bristles 11
11. Ovipositor compressed ventrally, but has a dorsal surface. Two supra-, one or two post-alar bristles ..... *maculatoides* Hardy
    Ovipositor entirely compressed 12
12. Ovipositor short 13
    Ovipositor very long 14
13. Supra- and post-alar bristles one each; brown species ..... *claripes* White; *neoclaripes* Hardy
    Two supra- and one post-alar bristles; a small black species from Tasmania ..... *laticornis* Macquart
14. Ovipositor about the length of the third to seventh abdominal segments inclusive. Supra- and post-alar bristles two each ..... *constrictus*, n. sp.
    Ovipositor a little less than the length of the fourth to seventh abdominal segments inclusive. Two supra-, one or two post-alar bristles ..... *conformis*, n. sp.
15. Upper forceps of the male genitalia with a row of about ten slender dorsal bristles. Two supra-, one or two post-alar and two scutellar bristles. Sixth and seventh abdominal segments of female normal ..... *margitis* Walker

Upper forceps of male genitalia with one long ventral bristle; lower forceps with a row of ventral bristles. Two or three supra-, three or four post-alar and four scutellar bristles. Sixth and seventh abdominal segments of female subcompressed and shining ..... *setosus* Hardy

Key to the species of Cerdistus *based upon females only.*

1. Sixth and seventh abdominal segments bare, shining and subcompressed 2
   Only the seventh abdominal segment bare, shining and subcompressed ..... *flavicinctus* White
   Sixth and seventh abdominal segments normal 4
2. Thorax with only one supra-alar bristle ..... *rusticanoides*, n. sp.
   Thorax with at least two supra-alar bristles 3
3. Thorax with not more than two postalar bristles ..... *fulvipubescens* Macquart
   Thorax with not less than three postalar bristles ..... *setosus* Hardy
4. Anterior femora with strong ventral bristles ..... *armatus* Macquart
   Anterior femora without ventral bristles 5
5. Thorax with two median stripes 6
   Thorax with one undivided broad median stripe 13
6. Ovipositor very long, as long as the three and a half anterior segments ..... *conformis*, n. sp.
   Ovipositor much shorter than this 7
7. Wings with conspicuous spots; black species from Western Australia ..... *maculatus* White
   Wings rarely with spots, but if so from the east-coast of Australia 8
8. Thorax with three postalar bristles ..... *maricus* Walker
   Thorax with not more than two postalar bristles 9
9. Moustache entirely or predominantly white 10
   Moustache conspicuously mixed with black and white hairs 11
10. A black species ..... *margitis* Walker
    A brown species ..... *vittipes* Macquart
11. Tubercle covering nearly the whole of the face ..... *rudis* Walker
    Tubercle covering only half the face 12
12. A black species from Tasmania ..... *fraternus* Macquart
    A brown species from Victoria ..... *lautus* White
13. Ovipositor short and subcompressed ..... *maculatoides* Hardy
    Ovipositor entirely compressed 14
14. Ovipositor very long, at least as long as from fifth to seventh abdominal segments inclusive 15
    Ovipositor short 16
15. Ovipositor as long as from fifth to seventh abdominal segment inclusive ..... *gibbonsi* Ricardo
    Ovipositor as long as from third to seventh abdominal segment inclusive ..... *constrictus*, n. sp.
16. Small black species with dark legs. From Tasmania ..... *laticornis* Macquart
    Medium sized brownish species with light coloured legs ..... *claripes* White. *neoclaripes* Hardy

Cerdistus rusticanoides, n. sp. Text-fig. 1.

A brownish species. In the male the moustache is composed of white or yellow hairs with a few black ones above, in the female black with a few yellow ones below. Behind the eyes the row of bristles is missing on the male and restricted to a few black bristles on the female. The dorsal thoracic bristles are disposed on each side of the median line as follows: Two presutural, one supra-alar, one postalar and four or five weak dorsocentrals. The scutellum contains two weak yellow bristles and the meta- and hypo-pleurals are also yellow. The lateral abdominal bristles are yellow and weak on the male and, except on the first segment, are missing on the female. The genitalia on the male contain an apical process, well developed and directed more or less horizontally, arising from the lower half of the upper forceps at the base of which is a conspicuous swelling.

Upper forceps of male genitalia with one long ventral bristle; lower forceps with a row of ventral bristles. Two or three supra-, three or four post-alar and four scutellar bristles. Sixth and seventh abdominal segments of female subcompressed and shining ..... *setosus* Hardy

Key to the species of Cerdistus *based upon females only.*

1. Sixth and seventh abdominal segments bare, shining and subcompressed 2
   Only the seventh abdominal segment bare, shining and subcompressed ..... *flavicinctus* White
   Sixth and seventh abdominal segments normal 4
2. Thorax with only one supra-alar bristle ..... *rusticanoides*, n. sp.
   Thorax with at least two supra-alar bristles 3
3. Thorax with not more than two postalar bristles ..... *fulvipubescens* Macquart
   Thorax with not less than three postalar bristles ..... *setosus* Hardy
4. Anterior femora with strong ventral bristles ..... *armatus* Macquart
   Anterior femora without ventral bristles 5
5. Thorax with two median stripes 6
   Thorax with one undivided broad median stripe 13
6. Ovipositor very long, as long as the three and a half anterior segments ..... *conformis*, n. sp.
   Ovipositor much shorter than this 7
7. Wings with conspicuous spots; black species from Western Australia ..... *maculatus* White
   Wings rarely with spots, but if so from the east-coast of Australia 8
8. Thorax with three postalar bristles ..... *maricus* Walker
   Thorax with not more than two postalar bristles 9
9. Moustache entirely or predominantly white 10
   Moustache conspicuously mixed with black and white hairs 11
10. A black species ..... *margitis* Walker
    A brown species ..... *vittipes* Macquart
11. Tubercle covering nearly the whole of the face ..... *rudis* Walker
    Tubercle covering only half the face 12
12. A black species from Tasmania ..... *fraternus* Macquart
    A brown species from Victoria ..... *lautus* White
13. Ovipositor short and subcompressed ..... *maculatoides* Hardy
    Ovipositor entirely compressed 14
14. Ovipositor very long, at least as long as from fifth to seventh abdominal segments inclusive 15
    Ovipositor short 16
15. Ovipositor as long as from fifth to seventh abdominal segment inclusive ..... *gibbonsi* Ricardo
    Ovipositor as long as from third to seventh abdominal segment inclusive ..... *constrictus*, n. sp.
16. Small black species with dark legs. From Tasmania ..... *laticornis* Macquart
    Medium sized brownish species with light coloured legs ..... *claripes* White. *neoclaripes* Hardy

Cerdistus rusticanoides, n. sp. Text-fig. 1.

A brownish species. In the male the moustache is composed of white or yellow hairs with a few black ones above, in the female black with a few yellow ones below. Behind the eyes the row of bristles is missing on the male and restricted to a few black bristles on the female. The dorsal thoracic bristles are disposed on each side of the median line as follows: Two presutural, one supra-alar, one postalar and four or five weak dorsocentrals. The scutellum contains two weak yellow bristles and the meta- and hypo-pleurals are also yellow. The lateral abdominal bristles are yellow and weak on the male and, except on the first segment, are missing on the female. The genitalia on the male contain an apical process, well developed and directed more or less horizontally, arising from the lower half of the upper forceps at the base of which is a conspicuous swelling.

The sixth and seventh abdominal segments are bare of tomentum and shining; only the seventh is definitely subcompressed, but the specimen under examination has not these segments in very good condition. The bristles on the femora are reduced in number and are irregular in occurrence, but they indicate the rows usually traceable on the intermediate and posterior femora. The venation of the wings is normal, the intermediate cross-vein is situated at the centre of the discal cell and the first posterior cell is rather long. Length, 13-17 mm.

Hab.—Victoria: Ferntree Gully, two males and one female, collected by C. E. Cole, 24th November, 1918; in the National Museum. This species was previously labelled by me as *R. rusticanus* White.

CERDISTUS FULVIPUBESCENS Macquart. Text-fig. 2.

Asilus fulvipubescens Macquart, *Dipt. Exot.*, Suppl. 4, 1850, 92.

A brownish species. On the male the yellow-brown face has a small tubercle with a white moustache and on the female a few black hairs occur above the white. The reddish antennae may be stained with black at the apex; the brown front has a few black or yellow hairs. Palpi and proboscis black, the hair on the former and beard white. A row of yellow bristles behind the eyes on the male and about six black bristles on the female represent this row. The dorsal thoracic bristles are disposed on each side of the median line as follows: Two presutural, two supraalar, one or two postalar and four or five dorsocentrals, all black. Two scutellar, the meta- and hypopleural bristles are reddish. On the dorsum there are two median brown stripes and at the apex of these a short stripe that reaches to and is traceable on the scutellum. A brown lateral, interrupted stripe reaches from before the transverse suture to near the scutellum. The lateral abdominal bristles are yellow. The upper forceps of the male genitalia are rather long and slender, and terminate in a strong horizontally directed process. On the female the sixth and seventh abdominal segments are bare, black and subcompressed, and the ovipositor is rather long. Legs entirely yellowish except at the apices of tibiae and femora, which are black, and occasionally other parts of the legs are stained darker. Intermediate and posterior femora have their ventral bristles long and slender; on the anterior side four or five bristles occur, whilst on the posterior side they are restricted to one subapical bristle. The venation of the wings is normal, the intermediate cross-vein is situated at the centre of the discal cell and the first posterior is rather long.

Variation.—Victorian specimens vary slightly from those of New South Wales and this is specially noticeable in the lighter colour of the abdomen, on the segments of which a median brownish spot is usually traceable.

Length, male 11-14 mm., female 15 mm.

Hab.—New South Wales: Narrabeen and Blackheath, October to November, 1919-1921, 4 males, 3 females. Victoria: W. Warburton, 15 December, 1918, 1 male, 1 female (C. E. Cole) in the National Museum. Further specimens consist of one female bred by Miss V. Irwin Smith, and five others in the Macleay Museum.

Observations.—Macquart's species, *Asilus fulvipubescens*, has hitherto been unrecognized, but the form here described is the only species I have seen that conforms to Macquart's description. The type was not seen by Miss Ricardo and was described from Bigot's collection, and so its whereabouts, if in existence, are unknown; on this account a pair has been labelled "Neotype".

The sixth and seventh abdominal segments are bare of tomentum and shining; only the seventh is definitely subcompressed, but the specimen under examination has not these segments in very good condition. The bristles on the femora are reduced in number and are irregular in occurrence, but they indicate the rows usually traceable on the intermediate and posterior femora. The venation of the wings is normal, the intermediate cross-vein is situated at the centre of the discal cell and the first posterior cell is rather long. Length, 13-17 mm.

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Variation.—Victorian specimens vary slightly from those of New South Wales and this is specially noticeable in the lighter colour of the abdomen, on the segments of which a median brownish spot is usually traceable.

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Hab.—New South Wales: Narrabeen and Blackheath, October to November, 1919-1921, 4 males, 3 females. Victoria: W. Warburton, 15 December, 1918, 1 male, 1 female (C. E. Cole) in the National Museum. Further specimens consist of one female bred by Miss V. Irwin Smith, and five others in the Macleay Museum.

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CERDISTUS MARICUS Walker.

Asilus maricus Walker, *Ins. Saund. Dipt.*, 1851, 141; List Dipt. Brit. Mus., viii, suppl. 3, 1855, 735.—*Cerdistus maricus* Ricardo, *Ann. Mag. Nat. Hist.* (8) ii, 1913, 436, and (9) i, 1918, 63.—*Cerdistus sydneyensis* Schiner, *Reise Novara Dipt.*, 1868, 187; Ricardo, 1913 and 1918.—*Neoitamus sydneyensis* Hardy, PROC. LINN. SOC. N.S.W., xlv, 1920, 191, fig. 4.

Synonymy.—Originally I described this species from a series amongst which there was a female identified by Miss Ricardo as *Cerdistus sydneyensis* Schiner. I now find in the Gibbons collection, a further female identified by Miss Ricardo as Walker's species. Certainly Walker's description fits the form described by me under Schiner's name, but Miss Ricardo evidently regards the two descriptions as belonging to two forms. There is a confusion here, for either the two are truly identical or else a complex of forms is standing under these names. It seems advisable to regard Schiner's name as being a synonym until such times as the types become available for study.

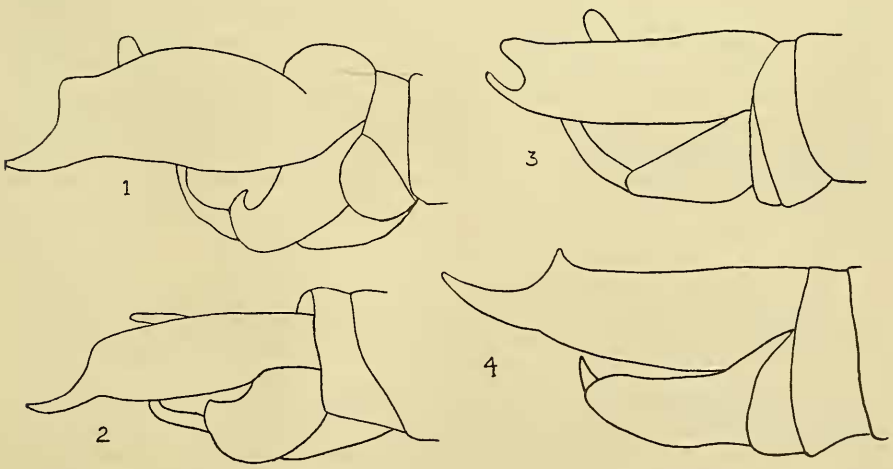
CERDISTUS LAUTUS White.

Rhabdotoitamus lautus White, *Proc. Roy. Soc. Tasmania*, 1917, 101.

R. lautus White is the same in structure as *C. fraternus* Macquart, but is different in colour, is smaller in average size and the female has a slightly longer ovipositor.

Hab.—Victoria: W. Warburton, 1 male, 1 female, Fenshaw, 1 male, Ferntree Gully. December, 1918 (C. E. Cole).

Observation.—Whereas this species has been found to occur only in Victoria, *C. fraternus* Macquart is only known from Tasmania, so it is possible to regard this lighter form as being a subspecies of the island type.



Figs. 1-4. Male genitalia of *Cerdistus*. 1, *C. rusticanoides*, n. sp. 2, *C. fulvipubescens* Macquart. 3, *C. gibbonsi* Ricardo. 4, *C. rudis* (Walker) White.

CERDISTUS MARICUS Walker.

Asilus maricus Walker, *Ins. Saund. Dipt.*, 1851, 141; List Dipt. Brit. Mus., viii, suppl. 3, 1855, 735.—*Cerdistus maricus* Ricardo, *Ann. Mag. Nat. Hist.* (8) ii, 1913, 436, and (9) i, 1918, 63.—*Cerdistus sydneyensis* Schiner, *Reise Novara Dipt.*, 1868, 187; Ricardo, 1913 and 1918.—*Neoitamus sydneyensis* Hardy, PROC. LINN. SOC. N.S.W., xlv, 1920, 191, fig. 4.

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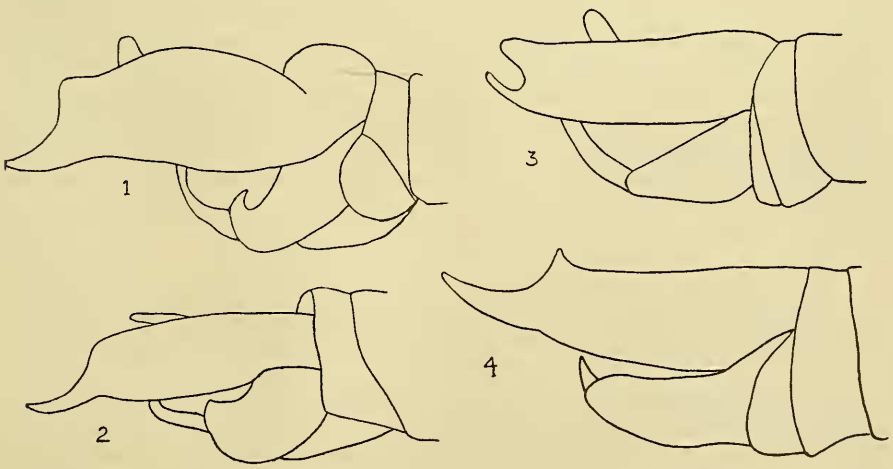
CERDISTUS LAUTUS White.

Rhabdotoitamus lautus White, *Proc. Roy. Soc. Tasmania*, 1917, 101.

R. lautus White is the same in structure as *C. fraternus* Macquart, but is different in colour, is smaller in average size and the female has a slightly longer ovipositor.

Hab.—Victoria: W. Warburton, 1 male, 1 female, Fenshaw, 1 male, Ferntree Gully. December, 1918 (C. E. Cole).

Observation.—Whereas this species has been found to occur only in Victoria, *C. fraternus* Macquart is only known from Tasmania, so it is possible to regard this lighter form as being a subspecies of the island type.



Figs. 1-4. Male genitalia of *Cerdistus*. 1, *C. rusticanoides*, n. sp. 2, *C. fulvipubescens* Macquart. 3, *C. gibbonsi* Ricardo. 4, *C. rudis* (Walker) White.

CERDISTUS GIBBONSI Ricardo. Text-fig. 3.

Neoitamus gibbonsi Ricardo, *Ann. Mag. Nat. Hist.* (9) i, 1918, 64.—*Neoitamus hyalinipennis* White (*nec* Ricardo), *Proc. Roy. Soc. Tasmania*, 1916, 175.

Synonymy.—I think there can be little doubt but that White's identification of *N. hyalinipennis* from Tasmania belongs here, but it is possible that more than one species has been incorporated by White under that name, including *C. armatus*. I have not seen *N. hyalinipennis* Ricardo, which is said to have the seventh abdominal segment subcompressed (i.e., forming part of the ovipositor as Miss Ricardo refers to it). The Gibbons collection contains authentic specimens and, moreover, according to the original description, there can be no doubt that the form referred to here is correctly identified. The species occurs abundantly.

Description.—A black species; the thick black moustache on the face contains a few white hairs only on the female. A row of black bristles occurs behind the eyes. The dorsal thoracic bristles are disposed on each side of the median line as follows: Two presutural, two supraalar, two postalar and about four dorsocentral. There are from two to six scutellar bristles and the meta- and hypo-pleural bristles are present. Usually all bristles black, sometimes some are white. The abdomen has two lateral black bristles on the first segment only. The upper forceps of the male genitalia are deeply emarginated so that the terminal processes appear to arise below an upper lobe-like process. The female ovipositor is long, a little longer than from the fifth to seventh abdominal segments inclusive. The intermediate femora have two bristles on the anterior side, a ventral row and a subapical bristle on the posterior side. The wings have a normal venation; the intermediate cross-vein is situated beyond the centre of the discal cell, and the first posterior cell is rather long.

Length, 18-23 mm. usually, but sometimes much smaller.

Hab.—New South Wales, Queensland and Tasmania. A long series of both sexes, including 6 males and 4 females from the last mentioned State.

Observations.—*C. gibbonsi*, *C. constrictus* and *C. conformis* have much in common and the females may sometimes be confused. It will be noted that the length of the ovipositor in *conformis* is between the lengths of the other two and so, when sorting females, it becomes possible to separate readily the two that have the undivided median thoracic stripe by noting if the ovipositor is longer (*constrictus*) or shorter (*gibbonsi*) than is the case of *conformis* which has a divided median thoracic stripe. All three forms are to be taken, sometimes plentifully in the same areas and during the same months and without some ready method of recognizing each, the certain identification of the three would be very laborious.

CERDISTUS RUDIS Walker. Text-fig. 4.

Asilus rudis Walker, List Dipt. Brit. Mus., vii, suppl. 3, 1855, 737.—*Dysmachus rudis* Ricardo, *Ann. Mag. Nat. Hist.* (8) xi, 1913, 422, and (9) i, 1918, 62; White, *Proc. Roy. Soc. Tasmania*, 1916, 172.—*Trichoitamus rudis* White, *ibidem*, 1917, 91.

A black species; the face is composed almost entirely of the tubercle and the moustache is black on the upper half and white on the lower. The black bristles in a row behind the eyes are unusually long. The dorsal thoracic bristles are disposed on each side of the median line as follows: Two presutural with which there may also be one or two others, two supraalar, one strong and one weak postalar and from four to eight dorsocentrals which alternate with rather long

CERDISTUS GIBBONSI Ricardo. Text-fig. 3.

Neoitamus gibbonsi Ricardo, *Ann. Mag. Nat. Hist.* (9) i, 1918, 64.—*Neoitamus hyalinipennis* White (*nec* Ricardo), *Proc. Roy. Soc. Tasmania*, 1916, 175.

Synonymy.—I think there can be little doubt but that White's identification of *N. hyalinipennis* from Tasmania belongs here, but it is possible that more than one species has been incorporated by White under that name, including *C. armatus*. I have not seen *N. hyalinipennis* Ricardo, which is said to have the seventh abdominal segment subcompressed (i.e., forming part of the ovipositor as Miss Ricardo refers to it). The Gibbons collection contains authentic specimens and, moreover, according to the original description, there can be no doubt that the form referred to here is correctly identified. The species occurs abundantly.

Description.—A black species; the thick black moustache on the face contains a few white hairs only on the female. A row of black bristles occurs behind the eyes. The dorsal thoracic bristles are disposed on each side of the median line as follows: Two presutural, two supraalar, two postalar and about four dorsocentral. There are from two to six scutellar bristles and the meta- and hypo-pleural bristles are present. Usually all bristles black, sometimes some are white. The abdomen has two lateral black bristles on the first segment only. The upper forceps of the male genitalia are deeply emarginated so that the terminal processes appear to arise below an upper lobe-like process. The female ovipositor is long, a little longer than from the fifth to seventh abdominal segments inclusive. The intermediate femora have two bristles on the anterior side, a ventral row and a subapical bristle on the posterior side. The wings have a normal venation; the intermediate cross-vein is situated beyond the centre of the discal cell, and the first posterior cell is rather long.

Length, 18-23 mm. usually, but sometimes much smaller.

Hab.—New South Wales, Queensland and Tasmania. A long series of both sexes, including 6 males and 4 females from the last mentioned State.

Observations.—*C. gibbonsi*, *C. constrictus* and *C. conformis* have much in common and the females may sometimes be confused. It will be noted that the length of the ovipositor in *conformis* is between the lengths of the other two and so, when sorting females, it becomes possible to separate readily the two that have the undivided median thoracic stripe by noting if the ovipositor is longer (*constrictus*) or shorter (*gibbonsi*) than is the case of *conformis* which has a divided median thoracic stripe. All three forms are to be taken, sometimes plentifully in the same areas and during the same months and without some ready method of recognizing each, the certain identification of the three would be very laborious.

CERDISTUS RUDIS Walker. Text-fig. 4.

Asilus rudis Walker, List Dipt. Brit. Mus., vii, suppl. 3, 1855, 737.—*Dysmachus rudis* Ricardo, *Ann. Mag. Nat. Hist.* (8) xi, 1913, 422, and (9) i, 1918, 62; White, *Proc. Roy. Soc. Tasmania*, 1916, 172.—*Trichoitamus rudis* White, *ibidem*, 1917, 91.

A black species; the face is composed almost entirely of the tubercle and the moustache is black on the upper half and white on the lower. The black bristles in a row behind the eyes are unusually long. The dorsal thoracic bristles are disposed on each side of the median line as follows: Two presutural with which there may also be one or two others, two supraalar, one strong and one weak postalar and from four to eight dorsocentrals which alternate with rather long

and strong hairs. These and the two scutellar, the meta- and hypo-pleural bristles are black. The abdomen contains one strong lateral bristle on the first segment and several on the third to eighth; on the latter segments the bristles are more numerous on the female and almost meet on the dorsum. The male genitalia are rather long and the tapering forceps contain an apical dorsal hump and a strong, horizontally directed process that issues from the lower half. The female ovipositor is very short and compressed. The intermediate femora have a row of three bristles on the anterior side, a ventral row that is placed well towards the anterior side, looking like a second row thereon, and a subapical bristle on the posterior side. The posterior femora have the bristles similarly disposed, but the rows are more complete. The wing venation is normal, the intermediate cross-vein is situated beyond the centre of the discal cell, and the first posterior cell is short.

Length, 10-12 mm.

Hab.—Tasmania: Hobart, male and female in the National Museum, taken respectively on the 29th and 1st October, 1916, by C. E. Cole. Although not necessarily conspecific with the Tasmanian forms, further specimens are included under this name: A male from Mosman Bay, Sydney, and a female with an *Atherimorpha* (Leptidae) as prey labelled "N. S. Wales" and having a completely black moustache, also a male and two females from Kosciusko, December, 1921 (G. A. Waterhouse). I have a rough sketch which I made from a Melbourne specimen in the National Museum and this, being the type locality, probably represents the form of genitalia on the typical species, but the one described above, which differs in the genitalia, is undoubtedly the form referred to by White under Walker's name and would be the genotype of his proposed genus *Trichotoitamus*. Until such times as sufficient material has accumulated for the purpose, it seems better to refrain from any attempt to separate the undoubtedly distinct species occurring amongst the complex here referred to under Walker's name.

Cerdistus armatus Macquart.

Asilus armatus Macquart, *Dipt. Exot.*, suppl. 1, 1864, 91, pl. 8, fig. 17.—*Neoitamus armatus* Hardy, Proc. Linn. Soc. N.S.W. xlv, 1920, 185, fig. 10, which see for synonymy and references.—*Asilus elicitus* Walker, *Ins. Saund. Dipt.*, 1851, 139; Ricardo, *Ann. Mag. Nat. Hist.* (8) xi, 1913, 447.

Synonymy.—In the National Museum there is a specimen of *Cerdistus armatus* that, although broken and in very bad condition, shows the essential characters by which this species is recognizable; this specimen was named by Walker as his *Asilus elicitus*, the type of which is apparently lost, therefore the opportunity is taken to place Walker's name as a synonym on the evidence of this authentic specimen.

Cerdistus claripes White. Text-fig. 5.

Rhabdotoitamus claripes White, *Proc. Roy. Soc. Tasmania*, 1917, 98, *nec* Hardy, 1920.—*Neoitamus australis* Ricardo, *Ann. Mag. Nat. Hist.* (9), i, 1918, 65.

Synonymy.—This name was given by White to a species, specimens of which were taken by Dr. E. W. Ferguson. Later Dr. Ferguson showed me specimens taken from the same locality which agreed with White's description. Major E. E. Austen, however, who kindly compared my drawing of the latter with the type at the British Museum, gave me enough information to suggest that I had misidentified White's species, so subsequently the name of the second form was

and strong hairs. These and the two scutellar, the meta- and hypo-pleural bristles are black. The abdomen contains one strong lateral bristle on the first segment and several on the third to eighth; on the latter segments the bristles are more numerous on the female and almost meet on the dorsum. The male genitalia are rather long and the tapering forceps contain an apical dorsal hump and a strong, horizontally directed process that issues from the lower half. The female ovipositor is very short and compressed. The intermediate femora have a row of three bristles on the anterior side, a ventral row that is placed well towards the anterior side, looking like a second row thereon, and a subapical bristle on the posterior side. The posterior femora have the bristles similarly disposed, but the rows are more complete. The wing venation is normal, the intermediate cross-vein is situated beyond the centre of the discal cell, and the first posterior cell is short.

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changed to *neoclaripes*. Again, from the same locality, Dr. Ferguson has taken specimens that not only conform to White's description, but also have the shorter upper forceps mentioned as the main difference from *neoclaripes* by Major Austen, and I have not been able to distinguish any further differences between the two forms. That these really do represent distinct species is not at all clear, but the genitalia in the first case illustrated show the upper forceps slightly attenuated upwards, whilst that of *claripes* is shorter, being without this apical attenuation.

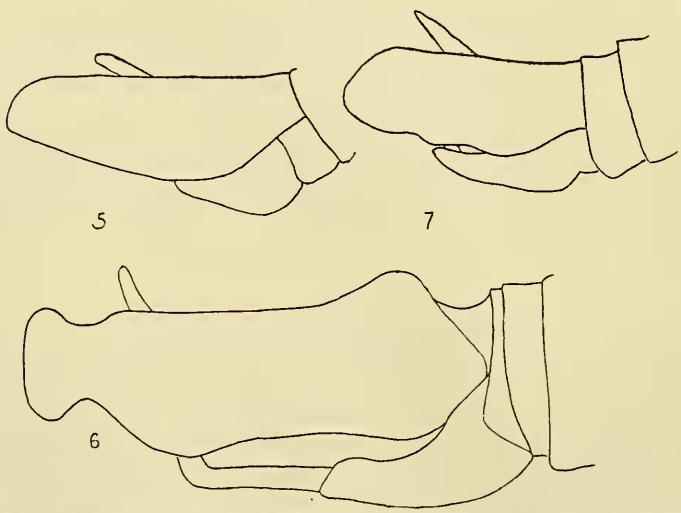
The description of *N. australis* Ricardo, agrees with specimens of *C. claripes* White and *C. neoclaripes* Hardy. The sketch of the genitalia of the type made by Mr. Brunetti agrees remarkably well with the drawing given here and the type locality is Roseville, Sydney, the locality of nearly all the Gibbons collection, and the same as that of one of White's two types.

CERDISTUS CONSTRICTUS, n. sp. Text-fig. 6.

Neoitamus grandis (Gibbons M.S.; Hardy M.S., name preoccupied); Irwin Smith, PROC. LINN. SOC. N.S.W., xlviii, 1923 (1924), p. xxx.

Synonymy.—In the Gibbons' collection recently acquired by the Australian Museum, there is a specimen named *Neoitamus grandis* which I believe to be given by Gibbons prior to 1920, in a paper that was never published and apparently has been subsequently destroyed. Quite independently I have used the same name in my own manuscripts and some specimens in collections are named as such, but the name cannot now be used as Miss Ricardo has published it for a Ceylon species. The name here substituted, *constrictus*, refers to the subapical constriction of the upper genital forceps, on the male.

Description.—A very robust species. Male: Face with a tubercle covering half its length and very prominent; front and face black, with yellowish tomentum bordering the eyes on the latter. Moustache normally black with about eight to ten white bristly hairs in the centre but sometimes it is predominantly white. Antennae, proboscis and palpi are black, the hairs on the latter and the beard



Figs. 5-7. Male genitalia of *Cerdistus*. 5, *C. claripes* White; from a sketch. 6, *C. constrictus*, n. sp. 7, *C. conformis*, n. sp.

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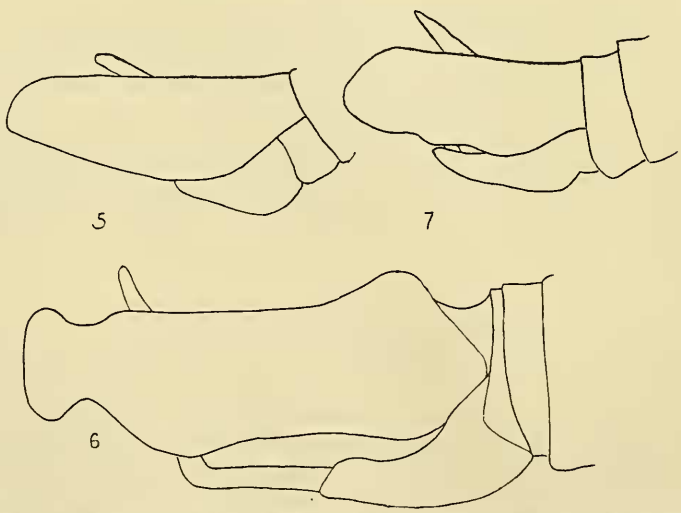

Figs. 5-7. Male genitalia of *Cerdistus*. 5, *C. claripes* White; from a sketch. 6, *C. constrictus*, n. sp. 7, *C. conformis*, n. sp.

white. About four white bristles behind the eyes constitute the postocular row. Thorax with three black dorsal stripes alternating with lighter ones that are yellowish on the anterior half and grey posteriorly. The dorsal thoracic bristles are disposed on each side of the median line as follows: Two presutural, two supraalar, two postalar and about two or three dorsocentrals; most of these bristles are white. Two strong and two weak bristles on the scutellum. Metapleurals strong and black, the hypopleurals very weak and white. Dorsally the abdomen is black with yellow apical margins on the second to sixth segments, laterally and ventrally grey. Genitalia large, long and black, covered with black bristly hairs and a few white ones placed apically; upper forceps with a subapical constriction. Legs black, the basal third of the posterior femora and at least two-thirds of all tibiae are red. The intermediate femora have two bristles on the anterior side, a ventral row and a subapical bristle on the posterior side; the posterior femora have their bristles disposed in a similar manner except that the ventral ones are fewer in numbers, longer, and restricted to the apical half of the row. The wing venation is normal, with the intermediate cross-vein situated well beyond half the length of the discal cell and the first posterior cell is short.

Female: Similar to the male, but the moustache usually contains more white hairs. The ovipositor is exceptionally long and broad, being about the length of from the third to the seventh abdominal segments inclusive.

Length, males normally 18 mm., females 23-25 mm.

Hab.—New South Wales: Clarence River, Ebor, Narrabeen (holotype and allotype), Sydney, Como, Blackheath and Kosciusko; October to December, 1914-1920. Queensland: Blackall Range, Tambourine Mt., Brisbane. Seven paratypes are in the National Museum, three males and one female were bred by Miss V. Irwin Smith and there are eighteen further paratypes in various collections besides thirteen in my own. It seems incredible that such a robust and widely spread species had not been described by some earlier author, nevertheless it does not conform to any description so far published.

CERDISTUS CONFORMIS, n. sp. Text-fig. 7.

Moustache black, usually with a few white hairs in the centre and sometimes predominantly white. The postocular bristles are reduced to a short row, all white. The intermediate thoracic stripe is divided and the dorsal thoracic bristles are disposed on each side of the median line as follows: Two presutural, two supraalar, one or two postalar, five dorsocentral. These, the two scutellar and the metapleural bristles are black, the hypopleurals are few, weak and white. The lateral marginal bristles of the abdomen are white on the anterior, and usually black on the posterior segments, but all may be white. Specimens in very good condition have a silvery-grey tomentum covering two of the middle abdominal segments, but this is very seldom to be seen. The male genitalia are simple; the ovipositor is as long as the three and a half anterior segments. The legs are mainly black, the intermediate femora have one or two bristles on the anterior side, one subapical on the posterior side and a few scattered ventral bristles. On the posterior legs, one subapical on the anterior side and about three subapical on the posterior side, the ventral bristles are reduced to long and strong white hairs. Wing veins normal, the intermediate cross-vein is at about two-thirds the length of the discal cell.

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Length, males 12-15 mm., females 15-18 mm.

Hab.—Victoria: Melbourne, Gisborne. New South Wales: Sydney, Narrabeen. Queensland: Stanthorpe, Brisbane. A very long series of both sexes. November to January, 1918-1924.

Observations.—This species conforms to *C. gibbonsi* and *C. constrictus* very closely, and some contrasting differences between the three are given under the description of the first mentioned.

Cerdistus margitis Walker.

Asilus margitis Walker, List Dipt. Brit. Mus., ii, 1849, 461.—*Neoitamus margites* (error for *margitis*) Hardy, Proc. Linn. Soc. N.S.W., xlv, 1920, 199, which see for further references.—*Asilus varifemoratus* Macquart, *Dipt. Exot.*, suppl. 4, 1850, 95.

Synonymy.—Now that the Tasmanian species of *Cerdistus* are so well known, it becomes possible to place those forms recorded from there, the descriptions of which were rather too scanty for earlier recognition. *Asilus varifemoratus*, according to its description, can only belong here, and thus the name is placed as a synonym. Possibly *Cerdistus australis* Ricardo will be found to belong here too.

Cerdistus laticornis Macquart.

Asilus laticornis Macquart, *Dipt. Exot.*, suppl. 1, 1846, 91; Walker, List Dipt. Brit. Mus., vii, suppl. 3, 1855, 735; Ricardo, *Ann. Mag. Nat. Hist.* (8) xi, 1913, 449.

Status.—This species had long been known to both White and myself, but White left it unnamed, not being able to separate it from *C. fraternus* (his *vulgatus*) with any assurance of success. It was, in his opinion, undoubtedly distinct, but approached small specimens of *C. fraternus* in most respects. From the shape of the male genitalia in the small series I possess, it appears at first sight that more than one species is incorporated, but it now transpires that the somewhat weak upper forceps are liable to dry out on pinned specimens into various distorted shapes. On this account the shape of the genitalia does not form a very reliable guide to the specific identity. Miss Ricardo refers to a short conical ovipositor on the type, but this is evidently an error in description.

Description.—Tubercle of face large, moustache with black hairs above and usually at the sides, the lower hairs are white. Bristles behind the eyes may be missing, but one row of black ones occurs when present. The dorsal thoracic bristles are disposed on each side of the median line as follows: Two presutural, two supraalar, one postalar, four to six dorsocentral. These and the two scutellar bristles black, metapleural mostly black, sometimes white, hypopleural very weak and white. The median thoracic stripe is undivided, by which character it can be readily separated from *C. fraternus*, on which this stripe is divided. Dorsal and usually lateral abdominal bristles are rather weak and black, ventrally they are white. Where these colours meet they may result in either two black lateral bristles or one white and one black. Upper forceps of male genitalia simple, having no definite characteristics, the shape depending on the amount of its curvature. Ovipositor short. The legs are black to a varying extent, the tibiae being brown from the base but having no definite limit. The first segment of the tarsi may also be tinged brown at the base. Intermediate femora with one bristle

Length, males 12-15 mm., females 15-18 mm.

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placed centrally on the anterior side, one subapical on the posterior side and a few ventral bristles representing the anterior row only. Posterior femora with a few bristles representing the row on the anterior side, mainly reduced in size and white; two subapical bristles on the posterior side; the ventral rows are sparsely represented, many of these bristles are white. Intermediate cross-vein situated at a little beyond half the length of the discal cell.

Hab.—Tasmania: Garden Island, Lymington, Cygnet, Hobart, Mt. Wellington and Launceston. Nine males, eight females.

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